

WHAT IS CLAIMED IS:

1. An image processing apparatus comprising:

saturation calculation means for calculating  
saturation information of an image;

5 parameter setting means for setting a plurality of  
parameters used to convert saturation of the image; and  
saturation conversion means for converting the  
saturation of the image on the basis of the plurality of  
parameters.

10 2. The apparatus according to claim 1, wherein said  
parameter setting means sets the parameters for low- and  
high-saturation sides of the image.

3. The apparatus according to claim 1, wherein said  
parameter setting means sets the parameters on the basis  
15 of the saturation information of the image.

4. The apparatus according to claim 1, further  
comprising:

instruction means for making an instruction input  
by a user, and wherein

20 said parameter setting means sets the parameters  
on the basis of the instruction by said instruction  
means.

5. The apparatus according to claim 2, wherein said  
saturation conversion means determines saturation  
25 conversion characteristics on the basis of the plurality  
of parameters, and converts the saturation of the image

on the basis of the saturation conversion characteristics.

6. The apparatus according to claim 5, wherein said saturation conversion means determines saturation conversion characteristics on the high- and low-saturation sides of the image on the basis of the plurality of parameters.

7. The apparatus according to claim 6, wherein the saturation conversion characteristics exhibit a monotonous increase.

8. The apparatus according to claim 6, wherein the saturation conversion characteristics exhibit a monotonous decrease.

9. The apparatus according to claim 1, wherein said saturation calculation means calculates the saturation information of the image by converting the image expressed in a first color space into a second color space.

10. The apparatus according to claim 9, wherein said saturation calculation means further converts the image, which has undergone saturation conversion in the second color space by said saturation conversion means, into the first color space.

11. The apparatus according to claim 9, wherein the first color space is an RGB color space, and the second color space is an HLS color space.

12. The apparatus according to claim 1, further comprising:

detection means for detecting a color distribution of the image;

5 generation means for generating gradation correction information of the image on the basis of the color distribution; and

gradation correction means for performing gradation correction of the image on the basis of the gradation correction information.

13. The apparatus according to claim 12, wherein said saturation conversion means performs saturation conversion for an image which has undergone the gradation correction by said gradation correction means.

15 14. The apparatus according to claim 12, wherein said generation means comprises:

highlight calculation means for calculating highlight area information of an image on the basis of the color distribution; and

20 white balance calculation means for calculating white balance information on the basis of the highlight area information and a predetermined highlight value, and

said gradation correction means corrects gradation of the image on the basis of the white balance information and the highlight value.

15. The apparatus according to claim 12, wherein said generation means comprises

shadow calculation means for calculating shadow area information of an image; and

5 black balance calculation means for calculating black balance information on the basis of the shadow area information and a predetermined shadow value, and

said gradation correction means corrects gradation of the image on the basis of the black balance  
10 information and the shadow value.

16. An image processing method comprising:

the saturation calculation step of calculating saturation information of an image;

the parameter setting step of setting a plurality  
15 of parameters used to convert saturation of the image; and

the saturation conversion step of converting the saturation of the image on the basis of the plurality of parameters.

20 17. The method according to claim 16, wherein the parameter setting step includes the step of setting the parameters for low- and high-saturation sides of the image.

25 18. The method according to claim 16, wherein the parameter setting step includes the step of setting the

parameters on the basis of the saturation information of the image.

19. A recording medium comprising program codes of an image processing method at least comprising:

5 a code of the saturation calculation step of calculating saturation information of an image;

a code of the parameter setting step of setting a plurality of parameters used to convert saturation of the image; and

10 a code of the saturation conversion step of converting the saturation of the image on the basis of the plurality of parameters.

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